

Recruitment, Retention, and Compliance Results from a Probability Study of Children's Environmental Health in Economically Disadvantaged Neighborhoods

**Ken Sexton, John L. Adgate, Timothy R. Church, Ian A.
Greaves, Gurumurthy Ramachandran, Ann L. Fredrickson,
Mindy S. Geisser, and Andrew D. Ryan**
doi:10.1289/ehp.6015 (available at <http://dx.doi.org/>)
Online Date 04 February 2003



Recruitment, Retention, and Compliance Results from a Probability Study of Children's Environmental Health in Economically Disadvantaged Neighborhoods

by

Ken Sexton*, John L. Adgate, Timothy R. Church, Ian A. Greaves, Gurumurthy Ramachandran, Ann L. Fredrickson, Mindy S. Geisser, and Andrew D. Ryan

Division of Environmental and Occupational Health
School of Public Health, University of Minnesota
420 Delaware Street, S.E.
Minneapolis, MN 55455

*Corresponding author, MMC 807, Room 1260, Minnesota School of Public Health, 420 Delaware Street, S.E., Minneapolis, MN 55455 tel. 612-626-4244 fax. 612-626-0650 email ksexton@umn.edu

Running Head: Recruiting Children for Environmental Studies

Abbreviations: FEV = Forced Expiratory Volume; IRB = Institutional Review Board;

MDH = Minnesota Department of Health; MPS = Minneapolis Public Schools;

SHIELD = School Health Initiative: Environment, Learning, Disease; VOC = Volatile Organic Compounds

Key Words: children, recruitment, enrollment, retention, low-income, minorities, probability sample, volatile organic chemicals, pesticides, metals, environmental tobacco smoke, asthma, lung function,

Acknowledgements: This research was funded by two Science to Achieve Results (STAR) grants (R825813 and R826789) from the U.S. Environmental Protection Agency (National Center for Environmental Research) and a grant from the Legislative Commission on Minnesota Resources (Grant No. Subd. 12, B01, “Measuring Children’s Exposures to Environmental Health Hazards”). We are especially grateful to Ken Meyer, David Heistad, Sara Mullett, Liz Zeno, and others at the Minneapolis Public Schools for their help in making this study possible. The cooperation we received from the principals (Sue Poston, Dick Shultz, and Ossie Brooks-James), teachers, nurses (Sharon Bishop, Beth Cefalu, Sue Steinberg, and Monica Lidral), maintenance personnel, parents, and students at the Lyndale and Whittier schools was exceptional and deeply appreciated. Collaboration with the Minnesota Department of Health, Indoor Air Program, was invaluable to the success of the study. We gratefully acknowledge the analytical work done by colleagues at several laboratories: the National Center for Environmental Health, Centers for Disease Control and Prevention; the University of Texas, Houston Health Science Center, School of Public Health; the University of Minnesota Cancer Center; and the University of Minnesota Medical School.

ABSTRACT

The School Health Initiative: Environment, Learning, and Disease (SHIELD) study used a probability sample of children (2nd through 5th grades) from two low-income and racially mixed neighborhoods of Minneapolis to assess childhood environmental health. Children were eligible to participate in SHIELD regardless of whether they or their families spoke a foreign language, their household had a telephone, or they were enrolled in a special education program. The overall enrollment rate in Year-1 was 57%, with a substantial disparity between children from English-speaking (42%) versus non-English-speaking (71%) families. At the end of Year-1, 85% were retained in the study. A relatively high percentage of children provided the two requested blood (82%) and urine (86%) samples in Year-1, and 90% provided a valid spirometry sample. Eighty-two percent provided both requested VOC badge samples, and both time-activity logs were obtained from 66%. However, only 32% provided both peak flow measurements. All percentages increased for those participating in the second year of the study. Results indicate that a school-based research design makes it feasible and practical to conduct probability-based assessments of children's environmental health in economically disadvantaged and ethnically diverse neighborhoods. There is an ongoing need, however, to improve understanding of the cultural, economic, psychological, and social determinants of study participation among this population.